

内蒙古北山地区斑岩型钼矿的成岩成矿时代和形成环境探讨

[点此下载全文](#)

引用本文: 杨岳清,赵金花,孟贵祥,严加永,吕博,王守光,贾玲珑,韩建刚.2013.内蒙古北山地区斑岩型钼矿的成岩成矿时代和形成环境探讨[J].地球学报,34(4):401-412.

DOI: 10.3975/cagsb.2013.04.03

摘要点击次数: 470

全文下载次数: 383

作者	单位	E-mail
杨岳清	中国地质科学院矿产资源研究所	yangyueqing0@sina.com
赵金花	中国地质科学院矿产资源研究所	
孟贵祥	中国地质科学院矿产资源研究所	
严加永	中国地质科学院矿产资源研究所	
吕博	中国地质大学(北京)	
王守光	内蒙古自治区地质调查院	
贾玲珑	内蒙古自治区地质调查院	
韩建刚	内蒙古自治区地质调查院	

基金项目:国家科技支撑计划(编号: 2006BAB01A09)

中文摘要:内蒙古北山地区近年来发现了一条近东西向的斑岩型(铜)矿带,其中规模较大的矿床有流沙山、额勒根乌兰乌拉和小狐狸山钼矿,这3个矿床的辉钼矿Re-Os同位素等时线测年分别为(260±10) Ma(中二叠世)、(332.0±9.0) Ma(早石炭世晚期)和(220.0±2.2) Ma(晚三叠世),显然,不同的成矿时代,反映了矿床形成的环境不同。本文在补充与成矿有关斑岩的锆石SHRIMP U-Pb年龄和岩石、矿石地球化学工作基础上,从区域地壳演化角度分别揭示了3个矿床形成的地质环境。在早古生代时期,3个矿床的原始位置均处于哈萨克斯坦板块中,到晚古生代,由于在红石山-百合山-蓬勃山一带裂谷发展成洋盆后,流沙山钼矿所处位置被割裂到塔里木板块中,额勒根乌兰乌拉和小狐狸山钼矿仍处于哈萨克斯坦板块中,其中,流沙山和额勒根乌兰乌拉钼矿床均处于南、北陆缘活动带的岛弧中,由于俯冲机制及下伏基底的差别,二岛弧中的构造岩浆活动有所不同,塔里木北缘活动陆缘带中的岩浆活动异常强烈,从石炭纪一直延续到二叠纪末,成矿作用早期以铁为主,晚期形成了钼(铜)矿产。哈萨克斯坦板块南侧陆缘带的岩浆活动稍逊于塔里木板块北缘,而且主要集中于石炭纪,并在这种环境形成了额勒根乌兰乌拉钼矿。二叠纪末,北山地区分裂的板块又拼贴成统一的大板块,从此,北山地区进入到一个陆内地壳活动环境,拉伸-挤压构造和由此引发的偏酸-偏碱性的岩浆侵入活动成为中生代地壳活动特色方式,小狐狸山钼矿及稀有金属矿床就是在这种环境中产生的。

中文关键词:斑岩型 成矿时代 锆石SHRIMP U-Pb法定年 成矿环境 地球化学 北山地区

Rock-forming and Ore-forming Ages as well as Formation Environments of Porphyry Molybdenum Deposits in Beishan Area, Inner Mongolia


Abstract:A nearly EW-trending molybdenum (copper) ore belt was found in Beishan area of Inner Mongolia. The relatively large deposits in this belt include Liushashan molybdenum deposit, Elegenwulanwula molybdenum deposit and Xiaohulishan molybdenum deposit., Re-Os isotope dating of molybdenite samples from these three deposits yielded isochron ages of (260±10) Ma (Middle Permian), 332.0 Ma (Early Carboniferous) and 220 Ma (Late Triassic) respectively. Obviously, different metallogenic epochs reflect different environments for the formation of these deposits. Based on new SHRIMP zircon U-Pb age data of the porphyry related to mineralization as well as basic rock and ore geochemical work, the authors revealed the formation environments of the three deposits from the angle of regional crustal evolution. In the Early Paleozoic, the three deposits were in Kazakhstan plate, and in the Late Paleozoic, due to the development of Hongshishan-Baiheshan-Pengboshan area from rift valley to ocean basin, the position of the Liushashan molybdenum deposit was split into the Tarim plate. Due to the difference in subduction mechanism and underlying basement, tectono-magmatic activities were somewhat different in two island arcs. In active marginal belt of north Tarim plate, magmatic activity was unusually strong and lasted from Carboniferous to the end of Permian. In the early stage, mineralization was dominated mainly by iron, and molybdenum (copper) deposits were formed in the late stage. Magmatic activity of the marginal belt in south Kazakhstan plate was a bit weaker than that in the northern marginal belt of Tarim plate, and the magmatic activity was mainly concentrated in Carboniferous; in such an environment, the Elegenwulanwula molybdenum deposit was formed. At the end of Permian, the split plate of Beishan area became a unified plate again through collage. From that time on, Beishan area entered into an environment of intra-continental crustal activity, and stretching-extrusion structure and meta-acid and meta-alkaline magmatic intrusion constituted an important style of Mesozoic crustal activity; in such an environment, the Xiaohulishan molybdenum deposit and some rare metal deposits were formed.

keywords:porphyry type ore-forming age zircon SHRIMP U-Pb dating ore-forming environment geochemistry Beishan area

版权所有 《地球学报》编辑部 Copyright©2008 All Rights Reserved

主管单位：国土资源部 主办单位：中国地质科学院

地址：北京市西城区百万庄大街26号，中国地质科学院东楼317室 邮编：100037 电话：010-68327396 E-mail: diqixb@126.com

 技术支持：东方网景